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## IN THE ABSTRACT:

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By using Using an image signal acquired by picking up a sample to be inspected by a color video camera, penetrant inspection and magnetic-particle inspection, which are non-destructive inspections, are carried out so that deficiency candidates, including a pseudo deficiency, are automatically detected and are displayed on a screen. A real deficiency can be detected from the displayed deficiency candidates-displayed on the screen. As image data is stored in memory means, information of a deficiency can be repeatedly reproduced on the screen. In the penetrant inspection, the chromaticity at each position on an image is acquired, a deficiency candidate is extracted based on the chrominance, and the deficiency is distinguished from a pseudo deficiency based on the differential value of the chrominance. A polarization filter is used to eliminate eliminates regular reflection eriginated originating from illumination in the penetrant inspection, and an ultravioletrays cutting filter is attached to the camera to prevent prevents noise in the magnetic-particle inspection. Equipped with both a white illuminating lamp and an ultraviolet illuminating lamp, both Both Inspections can be carried out with a single probe.